

POPULATION STATUS AND MALE GENITALIA OF *LETHE EUROPA NILADANA*  
AND *PARARGE EVERSMANNI CASHMIRENSIS*  
(LEPIDOPTERA: SATYRIDAE)<sup>1</sup>

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(With ten text-figures)

**Key words:** *Lethe*, *Pararge*, Satyridae, population, male genitalia, Wildlife Act.

Male genitalia of two rare subspecies, i.e., *Lethe europa niladana* Fruhstorfer and *Pararge evermanni cashmirensis* Moore have been studied. The females of both the species could not be collected during recent surveys undertaken between 1992 to 1996. Owing to their rarity and restricted distribution, it is proposed that they may be included in the Wildlife (Protection) Act, 1972.

INTRODUCTION

Under two ICAR sponsored projects, we studied fifty-four Satyrid species from northwest India. Out of these, two species have been identified as *Lethe europa niladana* Fruhstorfer and *Pararge evermanni cashmirensis* Moore on the basis of one male specimen each. Like most other Indian butterfly species, the external genitalia of these two had not been studied so far. Accordingly, an illustrated account of the male genitalia is provided. Their status has also been reviewed in the light of the Wildlife (Protection) Act, 1972.

OBSERVATIONS

**Bamboo treebrown *Lethe europa* (Fabricius)**

Fabricius, 1775, Syst. Ent.: 500 (*Papilio*).

*Lethe europa niladana* Fruhstorfer

Fruhstorfer, 1911, Fauna Indo-Austral 9:315

(*Lethe*)

**Male genitalia** (Figs. 1-5): Uncus longer than tegumen, curved ventrally, broad at base, beak-like, with distal end rounded, setae absent; brachia wanting; tegumen somewhat oval, narrow ventrally; appendices angulares long,

blunt distally, slightly curved inwardly, broad at base; vinculum longer than tegumen, thin strip-like; saccus moderately long, broad proximally, distal end rounded; valva with proximal half boat-shaped, distal half narrow, distal end slightly swollen, pilose; juxta U-shaped, strongly sclerotised; aedeagus long, tubular, subzone and suprazone almost equal in length, ductus ejaculatorius entering dorsad.

**Female genitalia:** Not examined.

Length of Forewing: Male: 32.0 mm.

**Material examined:** Uttar Pradesh: 1♂, 26.vi.1992, Bhimtal, Nainital.

The species *europa* Fabricius is the type-species of the genus *Lethe* Hübner and is represented by twelve subspecies. Out of these, *europa niladana* (Northern India to Burma), *europa nudgara* Fruhstorfer (Andaman Islands) *europa tamuna* de Niceville (Nicobar Islands) and *europa ragalva* Fruhstorfer (Southern India) belong to India (D'Abrera, 1985). The former subspecies, whose range has been given from Kumaon to Burma by Bingham (1905) has been dealt with here. According to Talbot (1947), the range of this subspecies extends from the erstwhile Punjab to Burma, Siam and Tong-King. Relying upon present surveys, the subspecies under reference is apparently very rare in the Kumaon Himalaya now.

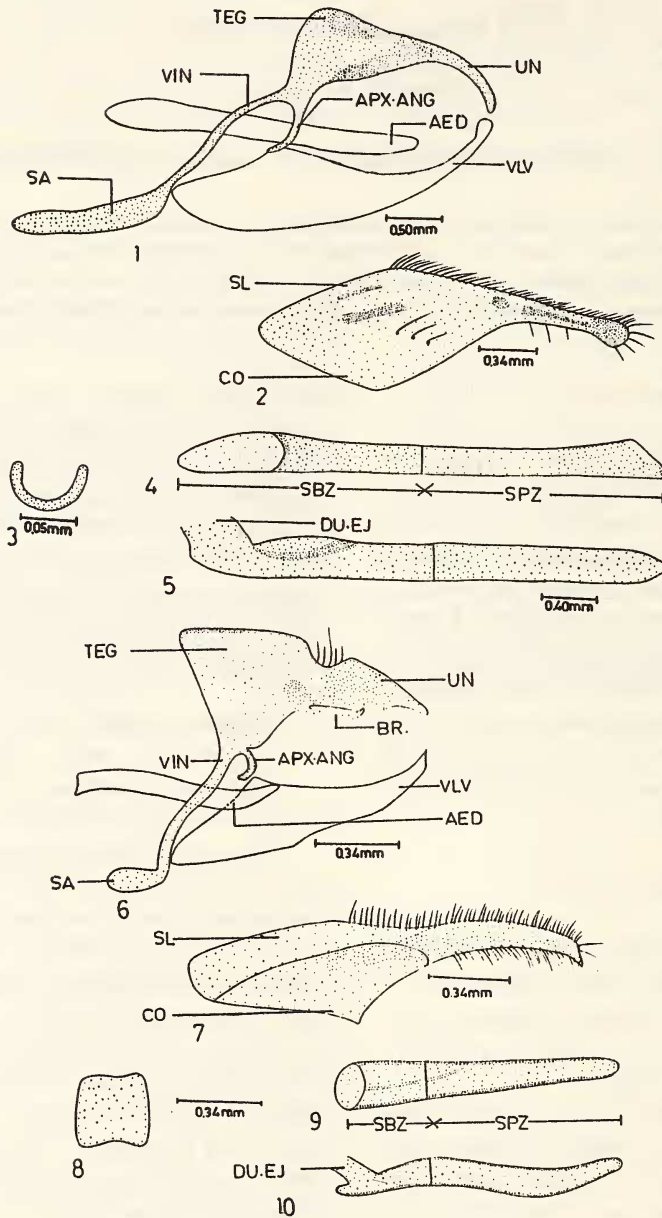
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MALE GENITALIA AND POPULATION STATUS



Figs. 1-5. *Lethe europa niladana* Fruhstorfer: 1. Male genitalia (lateral view), 2. Valva (inner view), 3. Juxta, 4. Aedeagus (dorsal view), 5. Aedeagus (lateral view);  
 Figs. 6-10. *Pararge eversmanni cashmirensis* Moore: 6. Male genitalia (lateral view), 7. Valva (inner view), 8. Juxta, 9. Aedeagus (dorsal view), 10. Aedeagus (lateral view).

**Yellow Wall *Pararge eversmanni* Eversmann**  
Eversmann, 1847, Moscow Bulletin 2: pl. 2  
figs 5, 6 (*Pararge*).

*Pararge eversmanni cashmirensis* Moore  
Moore, 1874, Proc. zool. Soc. Lond.: 265, pl.  
43 (*Pararge*).

**Male genitalia** (Figs. 6-10): Uncus shorter than tegumen, broad, narrow distally, beset with a few setae at base dorsally, a deep notch present between tegumen and uncus; brachia very slender, extending half the length of uncus, distal end upturned dorsally; tegumen long, broad; appendices angulares inwardly curved with blunt distal end; vinculum and tegumen subequal; saccus small with rounded distal end; valva roughly triangular, distal end pointed, digitate, pilose; juxta squarish, plate-like; aedeagus small, tubular, subzone smaller than suprazone, ductus ejaculatorius entering dorsal.

**Female genitalia:** Not examined.

Length of Forewing: Male: 27.0 mm.

**Material examined:** Himachal Pradesh:  
1 ♂, 21.vii.1992, Pangi, Chamba.

Marshall and de Niceville (1883) while enlisting the above species as *Pararge cashmirensis* Moore has recorded its distribution from Goolmurg [Kashmir] (= Gulmarg) and Pangi, besides stating it to be a rare and very local butterfly. The species is quite different from all other Indian species of this family. There are no ocelli on the dorsal surface of the forewings. Bingham (1905) followed Marshall and de Niceville (1883) but Evans (1932) has clarified

that *cashmirensis* Moore is a subspecies of *eversmanni* Eversmann. Talbot (1947) has also mentioned this subspecies to be rare from Chitral to Kashmir.

**Remarks:** The present surveys (1992-1996) further support that the two species studied are becoming rarer. So much so, that in spite of our best efforts, the females could not be collected and their importance in conservation of a species need hardly be emphasised. It is proposed here that these subspecies be closely monitored from the conservation point of view and included in the Wildlife (Protection) Act, 1972, under an appropriate schedule. It may be mentioned that *Lethe europa tamuna* de Niceville reported from Nicobar Islands is included in Schedule 1 (Part IV) of the Act.

#### ABBREVIATIONS USED

AED: Aedeagus, APX.ANG: Appendix angularis, BR: Brachium, CO: Costa, DU.EJ: Ductus ejaculatorius, SA: Saccus, SBZ: Subzonal portion of aedeagus, SL: Sacculus, SPZ: Suprazonal portion of aedeagus, TEG: Tegumen, UN: Uncus, VIN: Vinculum, VLV: Valva.

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